CLAIMS

That which is claimed is:

1. A method for placing an embolic agent into an aneurysm comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material, the delivery catheter having a first lumen and a second lumen, and the delivery catheter having a pre-shaped retaining wire extending through the first lumen to form a normally deflected distal section;

inserting a straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section of the delivery catheter to become relatively straight;

introducing the delivery catheter into a vessel of a patient to a position where the normally deflected distal section is generally aligned with an aneurysm;

withdrawing the straightening wire from the second lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to a position proximate to the aneurysm;

introducing an embolic agent deployment system into the second lumen of the delivery catheter and through the normally deflected distal section;

delivering an embolic agent into the aneurysm with the embolic agent deployment system;

withdrawing the embolic agent deployment system from the delivery catheter;

again inserting the straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

2. A method as defined in Claim 1, wherein the embolic agent deployment system is an embolic coil deployment system and the embolic agent is an embolic coil.

3. A method for placing an embolic agent into an aneurysm comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material, the delivery catheter having a first lumen and a second lumen, and the delivery catheter having a shape retaining wire extending through the first lumen;

providing an embolic agent deployment system having an elongated, flexible deployment catheter with a lumen extending therethrough, the deployment catheter having a distal section being formed of a material with a durometer which exhibits the characteristic that when a fluid pressure is applied to the lumen the walls of the distal section of the deployment catheter expand radially, the deployment catheter having a source of pressure coupled to the proximal section for applying a fluid pressure to the lumen, and the deployment catheter having an embolic agent being disposed in fluid-tight engagement within the lumen of the distal section;

shaping the distal section of the delivery catheter to form a normally deflected distal section;

inserting a straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section of the delivery catheter to become relatively straight;

introducing the delivery catheter into a vessel of a patient to a position where the normally deflected distal section is generally aligned with the aneurysm;

withdrawing the straightening wire from the second lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to a position proximate to the aneurysm;

introducing the embolic agent deployment system into the second lumen of the delivery catheter and through the normally deflected distal section;

applying fluid pressure to the lumen of the embolic agent deployment system thereby causing the walls of the distal section of the embolic agent deployment system to expand and release the embolic agent;

withdrawing the embolic agent deployment system from the delivery catheter;

again inserting the straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

4. A method as defined in Claim 3, wherein the embolic agent deployment system is an embolic coil deployment system and the embolic agent is an embolic coil.

5. A method for placing an embolic agent into an aneurysm comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material, the delivery catheter having a lumen, and the delivery catheter having a normally deflected distal section which is pre-shaped;

inserting a straightening wire into the lumen of the delivery catheter to cause the normally deflected distal section of the delivery catheter to become relatively straight;

introducing the delivery catheter into a vessel of a patient to a position where the normally deflected distal section is generally aligned with the aneurysm;

withdrawing the straightening wire from the lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to a position proximate to the aneurysm;

introducing an embolic agent deployment system into the lumen of the delivery catheter and through the normally deflected distal section;

delivering the embolic agent into the aneurysm with the embolic agent deployment system;

withdrawing the embolic agent deployment system from the delivery catheter;

again inserting the straightening wire into the lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

6. A method as defined in Claim 5, wherein the embolic agent deployment system is an embolic coil deployment system and the embolic agent is an embolic coil.

7. A method for placing an embolic agent into an aneurysm comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material and the delivery catheter having a lumen;

shaping the distal section of the delivery catheter to form a normally deflected distal section;

inserting a straightening wire into the lumen of the delivery catheter to cause the normally deflected distal section of the delivery catheter to become relatively straight;

introducing the delivery catheter into a vessel of a patient to a position where the normally deflected distal section is generally aligned with the aneurysm;

withdrawing the straightening wire from the lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to a position proximate to the aneurysm;

introducing an embolic agent deployment system into the lumen of the delivery catheter and through the normally deflected distal section;

delivering the embolic agent into the aneurysm with the embolic agent deployment system;

withdrawing the embolic agent deployment system from the delivery catheter;

again inserting the straightening wire into the lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

8. A method as defined in Claim 7, wherein the embolic agent deployment system is an embolic coil deployment system and the embolic agent is an embolic coil.

9. A method for placing an embolic agent into an aneurysm comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material and the delivery catheter having a first lumen and a second lumen;

inserting a straightening wire into the second lumen of the delivery catheter;

inserting a pre-shaped retaining wire into the first lumen of the delivery catheter to form a normally deflected distal section;

introducing the delivery catheter into a vessel of a patient to a position where the normally deflected distal section is generally aligned with the aneurysm;

withdrawing the straightening wire from the second lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to a position proximate to the aneurysm;

introducing an embolic agent deployment system into the second lumen of the delivery catheter and through the normally deflected distal section;

delivering the embolic agent into the aneurysm with the embolic agent deployment system;

withdrawing the embolic agent deployment system from the delivery catheter;

again inserting the straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

10. A method as defined in Claim 9, wherein the embolic agent deployment system is an embolic coil deployment system and the embolic agent is an embolic coil.

11. A method for placing an embolic agent into an aneurysm comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material and the delivery catheter having a first lumen and a second lumen;

inserting a shape retaining wire into the first lumen of the delivery catheter;

shaping the distal section of the delivery catheter to form a normally deflected distal section;

inserting a straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section of the delivery catheter to become relatively straight;

introducing the delivery catheter into a vessel of a patient to a position where the normally deflected distal section is generally aligned with the aneurysm;

withdrawing the straightening wire from the second lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to a position proximate to the aneurysm;

introducing an embolic agent deployment system into the second lumen of the delivery catheter and through the normally deflected distal section;

delivering the embolic agent into the aneurysm with the embolic agent deployment system;

withdrawing the embolic agent deployment system from the delivery catheter;

again inserting the straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

12. A method as defined in Claim 11, wherein the embolic agent deployment system is an embolic coil deployment system and the embolic agent is an embolic coil.

13. A method for placing a medical agent into a vessel comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material, the delivery catheter having a first lumen and a second lumen, and the delivery catheter having a pre-shaped retaining wire extending through the first lumen to form a normally deflected distal section;

inserting a straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section of the delivery catheter to become relatively straight;

introducing the delivery catheter into the vessel of a patient to a position where the normally deflected distal section is generally aligned with a pre-selected position within the vessel;

withdrawing the straightening wire from the second lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to the pre-selected position within the vessel;

introducing a medical agent deployment system into the second lumen of the delivery catheter and through the normally deflected distal section;

delivering the medical agent into the vessel with the medical agent deployment system;

withdrawing the medical agent deployment system from the delivery catheter;

again inserting the straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

14. A method for placing a medical agent into a vessel comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material, the delivery catheter having a lumen, and the delivery catheter having a normally deflected distal section which is pre-shaped;

inserting a straightening wire into the lumen of the delivery catheter to cause the normally deflected distal section of the delivery catheter to become relatively straight;

introducing the delivery catheter into the vessel of a patient to a position where the normally deflected distal section is generally aligned with a pre-selected position within the vessel;

withdrawing the straightening wire from the lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to the pre-selected position within the vessel;

introducing a medical agent deployment system into the lumen of the delivery catheter and through the normally deflected distal section;

delivering the medical agent into the vessel with the medical agent deployment system;

withdrawing the medical agent deployment system from the delivery catheter;

again inserting the straightening wire into the lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.

15. A method for placing a medical agent into a vessel comprising the steps of:

providing a delivery catheter having a proximal section, an intermediate section, and a distal section which is formed from a relatively flexible polymeric material and the delivery catheter having a first lumen and a second lumen;

inserting a straightening wire into the second lumen of the delivery catheter;

inserting a pre-shaped retaining wire into the first lumen of the delivery catheter to form a normally deflected distal section;

introducing the delivery catheter into the vessel of a patient to a position where the normally deflected distal section is generally aligned with a pre-selected position within the vessel;

withdrawing the straightening wire from the second lumen of the delivery catheter to cause the normally deflected distal section to again become deflected and thereby move to the pre-selected position within the vessel;

introducing a medical agent deployment system into the second lumen of the delivery catheter and through the normally deflected distal section;

delivering the medical agent into the vessel with the medical agent deployment system;

withdrawing the medical agent deployment system from the delivery catheter;

again inserting the straightening wire into the second lumen of the delivery catheter to cause the normally deflected distal section to become relatively straight; and,

thereafter withdrawing the delivery catheter from the vessel of the patient.